• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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The Flag of Empire Proclaims Their Deeds

It was October, 1923—twenty years ago.

Transcontinental trains were puffing into the railway stations of Southern California towns. Out of coaches and Pullman cars poured a multitude of eager homeseekers.

Along the dusty trails extending across the mountains and deserts between the Mississippi and the Coastal Plain of Southern California automobiles were chugging their way westward. They were loaded with the families and the chattels of a people seeking a new way of life in a land of sunshine and boundless opportunities.

One of the world's greatest migrations was under way. And ever at the head of this westward tide of human souls rode the golden vision of an Empire in the making. In the southwestern corner of the United States, a land of orange groves and winter tourists was being transformed into a bustling,

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Chairman W. P. Whitsett
Those called to guide the destiny of the District did not falter

South Coast Line Nearing Completion

Construction operations on the extension of the aqueduct distribution line from its former terminus in Santa Ana to the vicinity of Corona del Mar to serve the Coastal Municipal Water District rapidly are nearing completion.

The job consists of extending the Orange County feeder southward a distance of 64,700 feet, and includes the building of a regulating reservoir on the line with the capacity of 5,000,000 gallons. The line extension is made up of 56,000 feet of 36-inch steel pipe purchased by the District from the City of Pasadena. This pipe was part of a line which formerly delivered water from Morris reservoir to Pasadena's Sunset reservoir. For the remaining 8,700 feet of the feeder line extension, centrifugally-cast reinforced concrete pipe is being used.

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On the job with builders of the aqueduct distribution line extension from Santa Ana to the Coastal Municipal Water District on the Orange County south coast. (Left) A blow-off structure and section of pressure pipe extending under and across Upper Newport Bay. Within the pipe section where a man is standing at right center is the only point on the 400-mile aqueduct system where Colorado River water will travel below sea level. Two miles to the south, at the regulating reservoir on the line, the pressure in the line will have raised the water to an elevation 392 feet above sea level. (Center) This is not a secret war weapon. It is an air blower which maintains fresh air in the pipe while welding operations are in progress. (Right) A 30-foot section of reconditioned steel pipe is being lowered into place in a deep trench north of the Upper Newport Bay crossing.

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Flag of Empire

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booming metropolitan area.

It was a land blessed by Nature with a fertile soil and great potential wealth. It possessed in abundance the natural resources required by Man—all save one—water. For this was a semiarid, desert country.

Because it was the largest community in Southern California, Los Angeles had been the first to feel the dread pinch of a water shortage. Under the leadership of William Mulholland, it had gone 250 miles to the north, to the Owens River, and had tapped the snow waters on the eastern slopes of the Sierra Nevada Mountains. In 1913 Los Angeles had completed the building of the Owens River Aqueduct. During the next ten years it had more than doubled its population. But in 1921 most of the winter snowstorms had by-passed the watershed of the Owens River Aqueduct. Throughout the South Coastal Plain the winter rains were meager even for this semiarid country. Nor did the next two seasons offer substantial relief.

For countless thousands of years preceding the turn of the twentieth century, Nature slowly had been building up water reserves in underground basins throughout the South Coastal Plain. For the rapidly growing communities outside Los Angeles, these underground water basins were the sole source of supply. But in 1923 these water levels steadily were dropping. Southern California faced a serious water shortage.

The demand for water constantly was increasing. Thousands of acres of vacant land were being subdivided for new homes. Industry was moving in on barley fields and pasture. A new world port was being created on the mud flats of San Pedro Bay.

While the people of the South Coastal Plain stood confronted by an ever increasing shortage of water in 1923, another section of Southern California was being inundated by the raging flood waters of the Colorado River. Three hundred miles to the east a summer flood of that untamed river had broken through protective levees in the Palo Verde Valley. More than 50,000 acres of town and farm land disastrously were flooded. Further southward the people of Imperial Valley worked frantically to save their cities and ranches from the black flood menace.

Such was the fantastic course of events that challenged the people of Southern California in the autumn of 1923. Hindsight comes easier than foresight. That is why it took the eyes of practical prophets to see that in the turbulent flood waters of the Colorado River lay hidden the Southwest's opportunity for fortune and security. Two years before, in 1921, Frank E. Weymouth, then Chief Engineer of the U. S. Bureau of Reclamation, had pointed out that the growing flood menace of the Colorado River could best be eliminated by the building of Boulder Dam. In October, 1923, William Mulholland led the first party of engineers out across 300 miles of sunblistered desert and mountain country to search out the best method of bringing to the South Coastal Plain a portion of the Colorado River water that was wasting into the sea.

Under the guidance of clear visioned and dauntless leaders, the people of Southern California moved out to bring about the building of Boulder Dam and the Colorado River Aqueduct. Ten years later their unremitting labors had been crowned with initial success. During those ten years, Congress had authorized the building of Boulder Dam; the flood waters of the Colorado River were to be forever conquered. A new source of irrigation and domestic water and a great block of hydroelectric power had been assured. Thirteen cities of Southern California had organized The Metropolitan Water District of Southern California. In September, 1931, they had voted by a five to one majority to authorize a $220,000,000 bond issue to finance the construction of the Colorado River Aqueduct.

Then came the year 1933. Southern California, and all the world, was plunging headlong into the depths of an economic depression. The great tide of population movement into this Southwest country had thinned to a trickle. Industrial development was at a standstill. Real estate values were receding. In March Southern California had been visited by a disastrous earthquake.

And what of The Metropolitan Water District of Southern California and the Colorado River Aqueduct? October of 1933 found the aqueduct in its first year of construction. Out on rugged mountain and desert reaches men and machines were tackling the task of building the world's largest domestic water supply line. It was to be 400 miles in length. Out of 110 miles of tunnels that had to be blasted through mountain barriers, only about two miles had been actually excavated. The big job was just getting well under way.

There were those in Southern California ready to call the whole thing off. It was a time that tried men's souls. It was a supreme test of a people's vision, courage and determination.

Those who had been called to guide the destinies of the District and the great aqueduct project did not falter. Instead, they pressed forward the huge undertaking with greater and ever greater power and speed. Headed by Chairman W. P. Whitsett, the Board of Directors took steps to give to the citizens of the thirteen District cities a preferential right to thousands of construction jobs. During the eight years the job went forward, 38,000 men were provided with gainful employment. And another 25,000 men throughout the United States were kept busy fabricating and handling the vast quantities of materials and machines used on the work. Frank E. Weymouth had been made the Chief Engineer and General Manager of the District. Julian Hinds, now the General Manager and Chief Engineer, was the Assistant Chief Engineer. Under their direction the work was completed at a cost $22,000,000 less than the original estimates.

And now comes October of 1943. The Colorado River Aqueduct has been completed in its initial development. It was placed in service in June, 1941. Six months later America was plunged into a war for its existence. Destiny had marked out Southern California as a vital and strategic center of war production and operations.

Today the territory affected by the aqueduct has come forward to be the third greatest metropolitan area in the United States. It is producing more than one-tenth of America's tremendous output of war materials and machines.

Two decades, plus vision, courage, faith and toil, have wrought from the fabric of a brave dream the unconquerable ramparts of the new Empire of the Great Southwest.

• MONTHLY REPORT •

(EDITOR'S NOTE: The following is a brief summary of some of the activities of the District as set forth in the monthly report of General Manager Julian Hinds, filed with the Board of Directors in September 1943, covering work done in August.

Construction

Coastal Municipal Water District Line—The American Pipe and Construction Company is nearing completion of reconditioning of the steel pipe reclaimed from the Pasadena pipe line, and on August 2 started fabricating precast concrete pipe to be laid in the southerly portion of the line. During the month 14,392 feet of trench were dug with the trenching machine for a total excavated to date of 25,049 feet. The total length of pipe laid is 24,702 feet and 17,786 feet of trench have been backfilled. At the small regulating reservoir above Corona del Mar, the subcontractor has laid the inlet and outlet pipes, incased them in concrete, and placed the hand-compacted backfill over them; and completed 15,000 cubic yards of rolled embankment.

Operation and Maintenance

General — Boulder generating units N-5 and N-6 assigned to District use were in service during the entire month except short periods for necessary maintenance. Total energy delivered to Basic Magnesium, Inc. in August was 133,812,000 kwhrs.

Parker Dam—The water surface in Lake Havasu continued at practically full reservoir level throughout the month. The average discharge of the Colorado River at Parker Dam was 16,100 c.f.s. compared with 17,650 c.f.s. in July.

Parker Power Plant—The U. S. Reclamation Bureau operated Parker power plant continuously during the month. Energy delivered daily to the District system averaged 360,940 kwhr. The plant was operated in parallel with the District system only when required by load conditions.

Main Aqueduct—The outlet gates of Copper Basin reservoir were operated as required for release of water into the main aqueduct to supply the U. S. Army and to replenish District camp storage at Iron, Eagle, and Hayfield.

Pumping Plants — The pumping plants were operated for short periods to replenish Gene and Copper Basin storage and to supply water for District camp and United States Army use. Routine maintenance work continued at all plants and camps and on transmission and telephone lines and their patrol roads.

Distribution System—On August 31 the water level at Lake Mathews stood at elevation 1343.43 feet and the useful storage was 78,181 acre feet, compared wiht 81,419 acre feet on July 31. At the Softening and Filtration Plant water was softened from an average hardness of 372 p.p.m. to 101 p.p.m. Rate of flow through the plant averaged 33.3 c.f.s. or 21,500,000 gallons per day. Routine chemical, bacteriological, and plankton analyses were made of water samples taken from both the main aqueduct and distribution system. Softened, filtered Colorado River water was delivered to Beverly Hills, Burbank, Compton, Fullerton, Long Beach, Los Angeles, Santa Monica, Torrance and the U. S. Army hospital at Spadra.

Office Engineering and Design—For the Coastal M.W.D. line, drawings and reinforcement steel lists were completed for a by-pass pipe line and structure at the regulating reservoir; details were prepared and drawings revised to show necessary line changes in crossing an arm of upper Newport Bay and contractor's shop drawings and pipe laying diagrams were checked covering 16,000 feet of line for a total of 40,000 feet to date.

Hydrographic—Meetings of the Colorado River Board of California were attended for discussion of the proposed Mexican water allocation. The peak summer inflow to Lake Mead having passed, the usable storage decreased 280,000 acre feet to 24,637,000 acre feet on August 31. Discharge from Lake Mead averaged 16,816 c.f.s. compared with 18,038 c.f.s. in July.

Right of Way—Negotiations closed during the month covered for the distribution system 2 deeds to 3 parcels, 2 permits, and 4 releases for crop damages on the Coastal M.W.D. line; and for the main aqueduct, 4 reverse leases.

Purchasing—The total expenditures covered by 183 purchase orders and one agreement issued in August amounted to approximately $6,950.00. Freight shipments included 8 cars of cement for the Coastal M.W.D. line; 57 cars of salt and 1 car of sodium silicate to the Softening and Filtration Plant. Cash salvage sales for the month amounted to $1,371.82. The appraised value of salvage stock on hand at the end of the month was $279,893.31.

Our War Chest

Under the leadership of General Manager Julian Hinds and Controller J. M. Luney, employees of the District during September perfected their group organization preparatory to active participation in the forthcoming campaign to raise funds for the Los Angeles Area War Chest.

Those who have volunteered to help carry forward the big community job in their respective divisions are J. M. Gaylord, R. B. Diemer, T. T. Walsh, I. R. Pontius, R. A. Skinner, A. W. McKinlay, Alan Patten, George R. LeBaron, E. W. Putnam and Dorothy Goddard.

Funds contributed by District employees to the War Chest will be distributed for the benefit of the local Community Chests or other welfare groups in the various District cities and to the numerous war relief agencies, except the Red Cross. Included in the war relief agencies to be benefited by War Chest contributions are the U.S.O., War Prisoners Aid, United States Committee for the Care of European Children and the accredited organizations working in the interest of the war-stricken peoples of Europe and Asia.

Nearing Completion

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A contract for the removal of approximately 56,000 feet of the Morris reservoir-Pasadena pipe line from its original location, the reconditioning of this steel pipe and the installation of the reconditioned and reinforced concrete pipe on the new line extension, as well as the construction of the regulating reservoir on the line, was awarded to the American Pipe and Construction Co., the low bidder. Reconditioning of the Pasadena pipe, in accordance with District specifications and under District inspection, is being carried forward at the contractor's plant in South Gate.

The various methods employed in the reconditioning of the pipe have been sketched in previous issues of the NEWS.

All work in connection with the feeder extension has been carried forward under the general supervision of R. B. Diemer, Chief Operation and Maintenance Engineer for the District. Henry J. (Hank) Mills is Resident Engineer in charge of field operations and Glenn Lucas is Chief Inspector in charge of all operations on the reconditioning of the pipe.

NEWS FROM FIELD AND OFFICE

Meet Miss Leona Louise Lehmer, Secretary to the Executive Secretary of the Board of Directors. She has been engaged in these duties since November, 1942. A graduate of Fullerton Junior College and Whittier College, Miss Lehmer took over the work formerly performed by Miss Margaret Swank, now Sergeant Swank of the WAC.

Following more than ten years of service with the District, Mrs. Helen Grous Scherer resigned from her duties as head of Mails and Files on September 15. At an informal gathering of her Los Angeles office associates she was presented with a hand bag, jeweled pin and cologne bottle.

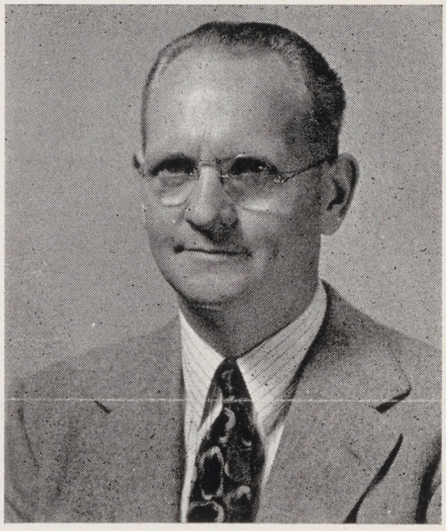
From retail merchants in District cities there comes this year the grim warning to all aqueducters and everyone else in Southern California: "Do your Christmas shopping early — and we don't mean maybe!" With a couple of hundred thousand buyers cramming the stores more than there was this time last year, there are fewer clerks to handle the rush. Merchandise selections are slimmer than ever, and the choice goods will go to the early birds. Gas rationing is scheduled to become still tougher, and the street cars and busses already are loaded to the limit. And it looks like delivery service will not be so hot either. Then there's the problem of mailing gifts; the trains are jammed with war materials and the Christmas packages will go when and if there is room. Therefore, if you want it for December, you'd better buy it in October.

Completing more than three years of responsible engineering work for the Venezuelan Government, J. B. Bond has returned to Southern California. He was in charge of field surveys leading to the selection of the Parker route for the aqueduct, and during most of the construction period was a Division Engineer stationed at the Banning field headquarters.

Captain Millard L. Johnson of the U. S. Army Engineers, visited former associates in the District's offices during a brief leave from military duties in September. Formerly stationed at Camp Claiborne, Louisiana, he was scheduled to assume new duties at Camp Sutton, North Carolina. From 1931 to 1935 he was a District Engineer with the Distribution Division. Just prior to entering military service he was City Engineer of Palos Verdes Estates.

A recent visitor at the District's Los Angeles offices was Jackson C. Hill, an aqueduct Lineman and Electrician from 1934 to 1939. He reported that he was headed for Mexico City where he expects to engage in electrical work on a new cement plant for the next three years.

On the job in the Accounting Division since March, 1933, has been Accountant Edward A. Clarke. He is one of the District's accounting and statistical experts who checks and double checks every item of charge and credit, and keeps the records straight and true.



For more than ten years Chester G. Olson has been engaged in various and responsible duties in connection with the District's financial operations. He is now Accountant in Chief Accountant A. W. McKinlay's division. Starting as General Clerk in the Controller's office in 1933, Mr. Olson was Assistant Treasurer from 1938 to 1941. He is now also Treasurer of the MWD Employees Federal Credit Union.

Word comes from Byron Wallace Hicks, an Inspector on the Mathews Dam and the Intake and Gene pumping plant jobs from 1935 to late in 1937. For the past three years he has been an Associate Civil Engineer with the U. S. Navy, and is now stationed at San Pedro.

Following two years of responsible engineering work in connection with a large war project in Meadville, Penn., Lester V. Branch has returned to Southern California and is now residing in Beverly Hills. From 1933 to 1941, Mr. Branch was a Senior Engineer in the District's Los Angeles headquarters.

Hats off to the District employees in the Transmission Division, in the Operation and Maintenance of the Main Aqueduct and to those in the Los Angeles office and garage! During September they participated 100 per cent in the purchase of War Bonds through pay roll deductions, with purchases averaging better than 10 per cent of the pay roll. And a lusty cheer for the employees at Intake and Gene, Eagle and Hayfield pumping plants; their purchases topped the 10 per cent mark.